

Meeting Summary:

Technology-Based Numerical Nutrient Limits in Discharge Permits: Technical Advisory Committee

June 15, 2004, 10 AM - 3 PM, DEQ Piedmont Regional Office

1. Members present:

Name	Representing
1. Alan Pollock	DEQ-OWQP, TAC Chairman
2. Bob Steidel	VA Municipal League
3. John B. Reeves, Sr.	Citizen
4. Melanie Davenport	Ches. Bay Commission
5. Mark Haley, Hopewell RWTF)	VAMWA
6. Jeff Corbin	Chesapeake Bay Foundation
7. Tim Slaydon, Spotsylvania Co. Utils.	VA Association of Counties
8. Tom Roberts, Smurfit-Stone (<i>alt. for Tom Botkins, MeadWestvaco</i>)	VA Manufacturers Assoc.
9. Robert Koroncai	EPA-Region 3
10. Katherine Slaughter	So. Environmental Law Center
State Resource Staff	
11. John Kennedy	DEQ-CBP, Staff Lead
12. Russ Baxter	Sect. of Natural Resources
13. Rick Hill	Dept. of Cons. & Rec.
14. Bill Shobe	Dept. of Planning & Budget
15. Jon Van Soestbergen	DEQ-CO Water Permits
16. Tom Faha	DEQ-NRO Water Permits

Others attending:

Tom Botkins -VMA (present in afternoon)
Bob Robinson - Omega Protein
Chris Pomeroy - Aqualaw / VAMWA alternate
Elleanore Daub - DEQ / WQ Standards
Ryan Brown - CBF
Brooks Smith - Hunton & Williams

2. Chairman Pollock reviewed these 6 (later amended to 7) ongoing activities related to nutrient reduction, how they work together and the intended purpose of each:
 - a. Tidal Water Quality Standards: criteria for D.O., clarity, and chlorophyll coupled with 5 designated uses. These represent the conditions sought for an "unimpaired" Chesapeake Bay and its tidal tributaries. Along with the Point Source Technology-Based regulation that is the subject of this TAC meeting, the standards form the basis for, and give authority to set, nutrient limits in VPDES discharge permits.
 - b. River Basin Allocations: the annual nitrogen, phosphorus and sediment loads that can be delivered to tidal waters via the 5 major Virginia Bay basins and achieve compliance with the new water quality standards. The allocations agreed to by the federal-interstate Bay Program in April 2003 are provisional in the sense that they may be revised based on the final WQ standards that are adopted.

- c. Tributary Strategies: plans (currently in draft for public review) that describe the point and nonpoint source nutrient reduction measures needed to meet the river basin allocations.
 - d. Technology-Based Numerical Nutrient Limits Regulation: the rulemaking being assisted by this TAC, which integrates with 'b' and 'c'. Will consist of concentration limits and waste load allocations, and meet the Governor's 12/03 directive to begin a comprehensive nitrogen reduction strategy. The regulation should aim to maximize water quality benefits in the most fiscally responsible manner possible.
 - e. Permit Limits: for nutrients will appear in VPDES permits of certain dischargers to the Bay drainage area. Permits will also specify an implementation schedule for any needed plant upgrades/retrofits. In the interim, from now until the WQ Standards and the Technology-Based Limits regulation are adopted, if any of these permits come up for reissuance they will be subject to new DEQ permit guidance. This guidance is intended to achieve 3 objectives: (1) "hold the line" at the current discharge N & P loads; (2) require N & P monitoring, if not already in the permit; (3) require drafting of a "Basis of Design Report" that presents treatment changes or retrofits needed to meet a variety of nutrient reduction levels, including the current "limit of technology".
 - f. Who Pays? for the combined point and nonpoint source nutrient controls. Will likely be a combination of ratepayers (sewer system users), landowners, and taxpayers -- the remaining question is how much each contributes to the effort.
 - g. The 7th related activity, suggested by the TAC, is "local TMDLs" which are developed to restore water quality in sub-watersheds of the Bay. In most cases they recommend actions to reduce pollutants of concern (e.g., bacteria) that also control nutrient and sediment inputs. As a result, they can contribute to the overall Bay restoration effort although targeted at more localized problems.
3. A summary was also given of:
- The current (2002) N & P loads delivered to tidal waters from Virginia's tributaries divided into point and nonpoint source portions.
 - The load reductions resulting from implementation of the draft Tributary Strategies.
 - The basin allocation "caps" achieved by point and nonpoint sources under the draft strategies. These meet (and in some basins exceed) the load allocations that Virginia committed to achieve under the Chesapeake 2000 Agreement.

It was noted that the relative contribution from point and nonpoint sources stayed about the same in all three sets of figures. In other words, a comparable level-of-effort is reflected in the numbers, and it was stressed that the nonpoint source category is being asked to achieve substantial reductions, at least equivalent to the effort proposed for point sources.

4. TAC members were provided with copies of the 5/4/04 Options Papers, with the meeting summary integrated into the "pros", "cons" and "notes" columns.
5. To follow-up on an information request from the 5/4/04 meeting, a list was presented with information on the "non-significant" municipal discharges in the Bay basins. Figures were shown for the total design capacity and estimated discharge nutrient loads from these other municipal discharges, with a comparison to the loads already accounted for from the "significant" plants. The conclusion was that non-significant

plants represent only a small fraction of the loads generated by the significant facilities, but there was general agreement that the technology-based limits regulation and the load allocations should somehow factor in the smaller POTWs.

6. **Issue #5: Point Source Technology Limits for Significant Dischargers.** Several treatment options for both nitrogen and phosphorus were presented. One option was use of the Bay Program's "tiered" treatment levels, ranging from BNR to limit-of-technology (LOT). It was suggested that the tiers were defined only from the aspect of estimating retrofit costs, and weren't necessarily based on technological levels. In response, it was noted that there were specific unit processes considered for each tier, and one intended result was to show the "knee-in-the-curve" where costs increased rapidly as you approach LOT. Only a few plants in the Bay drainage are using LOT, and it was suggested that performance data be examined for any plant that may be operating near its design capacity. It was noted that more stringent phosphorus treatment results in more biosolids that must be handled and disposed.

The TAC then reviewed the treatment levels called for in the draft tributary strategies. These were displayed by basin on a flip chart. The discussion then shifted to consideration of "minimum" treatment levels, and what would be the justification for defining these or the LOT level. Some options that were raised:

- Need to have a performance level tied to receipt of a grant (potentially).
- Might want to have a threshold that triggers use of trading options.
- Necessary to maintain "cap" loads.

The group was reminded that the purpose of this rule making is to develop a technology-based regulation, and were asked to put aside the tributary strategy allocations and water quality standards and focus only on the processes available to meet technological limits. Several members still wanted to define a "minimum" treatment level that could be applied to certain categories of plants (i.e., significant POTWs, non-significant POTWs, new plants, industrial facilities).

The option was raised of using another term for LOT, such as "best available technology" or "best achievable treatment", with a suggestion to apply this level to any new plants coming on-line. The reasons for considering this were:

- Want to minimize any new load that must be offset under a "cap".
- More cost-effective to install stringent treatment in newly constructed plants, rather than retrofit later.
- Reliability of point source controls is much higher, and more dependable compared to nonpoint source controls, which is an important consideration for ensuring water quality protection.

7. **Issue #6: Alternatives to Point Source Nutrient Technology Limits** (and if allowed, what criteria should be used as the basis for allowing the alternative limits?). The discussion started with a focus on industrial plants, because their wastewater characteristics can be radically different from municipal plants and some of the assumptions about technology-based limits may not be applicable to them. There was general consensus that industrial plants should be examined from the standpoints of both wastewater treatability and physical constraints (or in combination), due to the large variability among these facilities. It may be more appropriate to look at percent reductions for industrials, instead of numerical

concentrations tied to a technology. It was asked how these alternatives relate to load allowances (rulemaking is to establish a tech-based performance requirement, not necessarily a load cap). This issue will be covered under Issue #7 to follow.

Some TAC members questioned the need (or ability) to define a tech-based performance requirement for industrial plants, because of the variation among facilities, even within similar industrial categories. Could the tech-based regulation be limited to just the POTWs, and the industrials covered with assignment of cap loads within the basin allocations?

Other factors suggested for consideration:

- Existing system capabilities.
- Feasibility to retrofit or modify operation for more stringent treatment.
- Cost to retrofit.
- Accounting for "net" vs. "gross" nutrient discharge loads. This involves calculating the nutrient content of the intake water a plant draws from the river, which is then run through the plant (either in process streams or non-contact cooling use) and discharged along with any nutrients added by the industry. The "net" load would be just the fraction of the total that the industrial plant added -- not counting what originated in the intake water.

To achieve alternative limits there may be allocation "trading", which involves issues of treatability and accountability. If a plant couldn't treat to a certain performance level, but still had an allocation load responsibility, then the remaining load would have to be offset and trading might be an option to achieve this. However this issue is decided, it has to be enforceable if the cap loads are to be maintained.

Two different types of trading were discussed as options:

- Allocation trading - deals with equity, feasibility of retrofits and distribution of capital construction costs.
- Compliance trading - done operationally, used to "balance the books" at the end of the compliance period.

It was noted that this issue must be viewed from both ends of a treatment plant. Some industrial plants add nitrogen or phosphorus to their nutrient deficient wastewater to help the biological processes function. It's a difficult balancing act because there aren't reliable thresholds that specify how much N or P to add and still ensure efficient biological function without the potential to exceed a permit limit.

8. **Issue #7: Water Quality Management Planning Regulation – Waste Load Allocations.** The VPDES permit program has relied on the WQMP regulation(s) to set waste load allocations for water quality based limitations. Using the APA process provides the public an opportunity to participate in establishing WLAs that have area-wide and multiple-owner impacts.

There is a need to express the allocations and cap maintenance somewhere in this regulatory framework. The TAC was reminded that the discharge limit for new plants might be set at the best achievable treatment level, but some mechanism must be available for allocation trading either among point sources or offsets from

nonpoint sources. Cap maintenance must be documented in order to fit any new significant discharges under the cap.

It was asked if the proper procedure to use in this rulemaking is the Total Maximum Daily Load (TMDL) process. In response, the State would only adopt the point source portion (the WLA) of the total C2K load caps under the revised WQM Planning regulation, not the nonpoint source portion.

Several point source representatives were still concerned about the certainty of future POTW requirements, based on the recent SWCB action to reissue the Philip Morris and Onancock VPDES permits (with provisions taken from the new DEQ permit guidance), the pending water quality standards adoption, and this tech-based limits regulation. It was explained that the SWCB's action on those permits was independent of the other activities -- the drivers for final point source limits will be this technology-based numerical limits regulation and the wasteload allocations in the WQMP regulation.

The issue of non-significant plants was raised again, with a question on how their loads are accounted for in the tributary strategies. They aren't identified as a discrete source in the strategies, although their discharge loads are captured in the Bay models (since those are calibrated to monitoring data), and distributed among the various nonpoint source categories. For information purposes, DEQ staff will estimate the total discharge nutrient load for several ranges of plant sizes, based on design capacity and a cut-off for application of the tech-based numerical limits (e.g., TN = 8 mg/l; TP = 1 or 1.5 mg/l).

9. Public Comments:

- This technology-based approach, as applied to industrials, shouldn't be done on a plant-by-plant 'treatability' basis. It should rely on groupings of industrial types or categories and yield an equitable and consistent requirement across that industry type. Should do a "Maximum Achievable Control Technology" (MACT) analysis for each industrial category in the list of significant nutrient dischargers, as also review existing (or draft) effluent guidelines documents that focus on nutrient removal capabilities.
- Need to develop and use a better term than "limit-of-technology" (LOT). It may imply that this is the ultimate limit that can be achieved, and fails to recognize the possibility of technology advancements. Suggested alternatives were advanced treatment, best available technology, or best achievable treatment.
- The hope is that at the end of this process we have a regulation that at least addresses the largest, most significant plants responsible for the majority of the nutrient loads. The smaller plants can be dealt with later on if necessary, but trying to account for all the variations and "exceptions to the rule" shouldn't delay or sidetrack efforts to deal with the largest nutrient inputs that are impacting water quality.

The next meeting of the Technical Advisory Committee will be July 6, 2004, at the DEQ-Piedmont Regional Office, starting at 10 AM.